00005 6026

Department of Energy

ROCKY FLATS FIELD OFFICE
P O BOX 928
GOLDEN COLORADO 80402 0928

JUN 2 3 1995

95-DOE-08470

Mr Martin Hestmark
U S Environmental Protection Agency, Region VIII
ATTN Rocky Flats Project Manager, 8HWM-RI
999 18th Street, Suite 500, 8WM-C
Denver, Colorado 80202-2405

Mr Joe Schieffelin
Hazardous Waste Facilities Unit Leader
Colorado Department of Public Health and Environment
4300 Cherry Creek Drive South
Denver, Colorado 80222-1530

Gentlemen

In the approval letter, dated April 21, 1995, for the Operable Unit (OU) 3 , Technical Memorandum (TM) 3 , Human Health Risk Assessment Model Description, the Environmental Protection Agency (EPA) requested a response to several questions This letter provides a response to the questions and proposes a meeting to discuss results of the OU 3 air modeling as requested by EPA

The following questions were posed by the EPA

1 What is the definition of the "average 10-meter equivalent threshold velocity" mentioned in Section 3 of Technical Memorandum 3? Why is the 10-meter height considered relevant to the human health risk assessment instead of the breathing zone height?

Response The average 10-meter equivalent threshold velocity is the wind velocity measured at 10 meters when re-suspension on the ground first begins Ten meters is merely a standard height to report wind speeds All EPA-approved models use the 10-meter wind speed for their dispersion calculations The change in wind velocity with height from ground level to ten meters is a well known phenomena During the wind tunnel testing, the wind speed at the ground was measured at the point when dust re-suspension began and then converted to a ten meter wind speed Given a wind velocity at ten meters, the wind velocity responsible for dust re-suspension at ground level can be calculated

When the box model is run, the wind speed used will be the average wind speed through the vertical extent of the box The box is two meters high so the wind speed used will be approximately one meter high (see Section 3 2 3 of TM 3)

2 How will various erosion rates, based on different wind speeds, be incorporated into the box model and how will the results be combined to determine the final particulate concentrations?

Response Equations have been developed from the Midwest Research Institute wind tunnel data to calculate erosion rates These equations describe how the emission rate changes with increasing wind speed The equations represent the results of different regression techniques applied to the data, which correspond to varying emission rate

Equations most representative of OU 3 site conditions will be used to calculate the emission rates For any given time where the wind speed is above the threshold for dust re-suspension, the equation will be used for that wind speed to calculate the emission rate This emission rate will then be used to calculate the steady state concentration of particulates

3 EPA has been concerned about the validity of the assumption that the radioactivity levels measured in the soil in Operable Unit 3 represent radioactivity levels in airborne particulates From meetings held in January and February, 1994, we know that DOE/RFFO shares this concern and has analyzed various particulate fractions for plutonium and americium activity levels We are very interested in the results of these analyses and request that DOE/RFFO provide this information and an opportunity to discuss it among EPA, DOE/RFFO and the Colorado Department of Public Health and Environment

Response The data from the plutonium analysis of the Midwest Research Institute wind tunnel study have been recently received from the laboratory As soon as the results have been analyzed and evaluated, the data can be presented and further discussions can take place The results of this analysis will be incorporated into the exposure modeling portion of the OU 3 Human Health Risk Assessment The main piece of information we desire from these analyses is a comparison of the plutonium concentrations in the soil to the plutonium concentrations of resuspended particulates

The following additional question was posed by the CDPHE

1 It is not clear from the text whether the model results will be verified with available local meteorological data or with data obtained from the wind tunnel studies If possible, the model should be verified with site specific information The text only states (in Table 3-1) that the wind speed parameter will be determined from wind tunnel studies and meteorological monitoring However, it needs to be evaluated whether the results of the modeling make sense when compared to the monitoring data collected nearby

Response The model will utilize local meteorological data, specifically the mean wind speed through the vertical extent of the box, and the ten meter equivalent wind speed to calculate the erosion potential The model will also incorporate input parameters derived from the wind tunnel study, specifically the equation derived to calculate the emission rate The results will be compared to any site specific dust concentration measured in the area

The above responses will be incorporated into the Human Health Risk Assessment portion of the Resource Conservation and Recovery Act (RCRA) Facilities Investigation/Remedial Investigation Report

Your offices have been contacted informally to arrange a meeting during the week of July 10, 1995 as a time to discuss results of the OU 3 air modeling

If you should have questions concerning this matter, please call Bob Birk at 966-5921

Sincerely,

for Steven W Staten
IAG Project Coordinator
Environmental Restoration

cc
C Gesalman, EM-453 1, HQ
J Ahlquist, EM-453, HQ
L Ekman, EM-453, HQ
B Lavelle, EPA
M Arai, CDPHE
B Birk, ER, RFFO
M Guillaume, SAIC
M Buddy, EG&G
T Spence, EG&G
G Euler, EG&G
Admin. Record 080